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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,020	09/11/2003	Jeffrey T. Ranney	21401-96	5917

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EXAMINER

MENON, KRISHNAN S

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/660,020

Applicant(s)

RANNEY, JEFFREY T.

Examiner

Krishnan S. Menon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 18-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 18-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Claims 1-7 and 18-23 are pending after the amendment of 6/2/05.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Lombard (US 6,409,841).

Lombard teaches a nanofiltration system comprising a filtration chamber with an input and output and a nanofiltration membrane, which allows passage of acids and blocks passage of sugars; and an acid evaporator to further concentrate the acid by evaporation – see STAGE 2 of, Fig 3 and claim 29.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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2. Claims 2-7, 18-23 are rejected under 35 U.S.C. 103(a) as unpatentable over Lombard (US 6,409,841) as applied to claim 1 above (paragraph 1) and further in view of Paananen et al (US 2004/0006222 A1).

Claim 2 differs from the teaching of the Lombard ref in the limitation of "further comprising chromatographic unit". Paananen teaches using chromatographic unit for fractionation of sugars prior to the NF stage in Figure 1 and paragraph 36-45. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Paananen in the teaching of Lombard to have the chromatographic unit in the system to have further fractionation of sugars before the nanofiltration stage to separate the acids as taught by Paananen. One would use the teaching of Paananen for fractionation of sugars by chromatography as taught in paragraph 26-27, especially for sugar beets and the like (see Lombard column 5 lines 45-60).

Claim 3: feed back from NF to chromatographic unit – see fig 3 of Paananen.

Claim 4: NF prefilter: this is covered by the press in figure 3 of Lombard and paragraph 28 of Paananen– successive and any desired combination.

Claims 5 - 7: further comprising sugar processing system – Stage 4, figure 3 of Lombard and para 50 and 28 of Paananen: subsequent systems can comprise more NF, chromatographic systems or fermentation system.

Claim 18: Lombard teaches a nanofiltration system comprising a filtration chamber with an input and output and a nanofiltration membrane, which allows passage of acids and blocks passage of sugars; and an acid evaporator to further concentrate the acid by evaporation – see STAGE 2 of, Fig 3 and claim 29. Claim 18 differs from

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the teaching of the Lombard ref in the limitation of "comprising a chromatographic unit".

Paananen teaches using chromatographic unit for fractionation of sugars prior to the NF stage in Figure 1 and paragraph 36-45. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Paananen in the teaching of Lombard to have the chromatographic unit in the system to have further fractionation of sugars before the nanofiltration stage to separate the acids as taught by Paananen.

One would use the teaching of Paananen for fractionation of sugars by chromatography as taught in paragraph 26-27. Inlets and outlets for both chromatographic unit and NF unit are inherent in the system – In re Napier, etc. passage of acids by the membrane is also inherent – in re King. The limitation of 'for processing acid used in the biomass hydrolysis.', which is taught by the Lombard ref, is intended use. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987)

Claim 19: acid is sulfuric acid: this is intended use – Ex parte Masham. Also Lombard teaches sulfuric acid in column 7 lines 9-21.

Claim 20: Feedback line – see fig 3.

Claims 21 and 22: the sugar processing system is taught by Lombard – see stage 4 in figure 3. The location of the sugar processing system (fermentation or distillation) would depend on the sugar to be processed and from where it is separated. It would be obvious to one of ordinary skill in the art at the time of invention to locate the

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sugar processing system taught by Lombard coupled to the chromatographic system instead of being coupled to the NF system if the sugar to be processed is separated by the chromatographic system.

Claim 23: thermal evaporative concentration system – see figure 3 and claim 29 of Lombard.

Response to Arguments

Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP, § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Krishnan S. Menon
Patent Examiner
7/8/05


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